

In Search Of Darkness



Lights across Europe, 2002, NASA image

Holly Haworth

"What is life? It is the flash of a firefly in the night ... the little shadow which runs across the grass and loses itself in the sunset."

—Chief Crowfoot of the Blackfoot Confederation, 1890

THE BEGINNING

I REMEMBER WHEN EVERYTHING WAS DARK. In the upstairs bedroom of a creaking hundred-and-fifty-year-old farmhouse, I first learned of night. Somewhere in the house were a mother and a brother, but at night it was just me, alone, lying in a brass frame bed with quilts pulled up to my chin. Looking into darkness.

In summer it was different. The night had its own enchantment. When darkness fell, our bare feet ran out across moist grass (it seemed always covered in dew), our hands gripping wide-mouth Mason jars. Through the young pines we chased glowing dots, caught them as they floated, pushed them gently

down into our jars, then trapped them with cloth laid over and cinched with a rubber band. Each delicate body was a glowing orb of mystery. They floated on invisible waves, up into the trees, then lower, down to us again. Soft blinking things whose paths were unknown to us, like stars that we could reach, lighting up against the wider sky full of stars. The earth whirled around, the sky spun, my neck craned upward, my body came unloosed in the dizzying night. When the coyotes started to yelp and maraud, all reason was unhinged, and I tossed my head up towards the moon and howled with laughter. I was drunk on humidity, sweat, bare feet, wet grass, and the swirl of lights inside a Mason jar.

THE BEGINNING, II

IN THE BEGINNING WAS DARKNESS. Over the formless void, the deep waters, God hovered. Then: *Let there be light*, and there was. It was good. It was divided from darkness, for God knew that neither could contain the other, though the earth must contain both. The light would be day, the darkness night. The first words turned the lights on, but God turned them off at night. Evening came. It would be that way for a long, long time.

When we got here, the earth began to teach us the movements of her dance, her rotation between light and dark. We learned the fluid steps back and forth, from night to day. The motions that would carry us from one to the next: dawn, awakening, hunger, setting forth, sustenance, return, dusk, storytelling, lying down, sleep. Our bodies, like all bodies, were made for both the dark and the light. All the creatures helped us with the motions. We stepped in time with the sun and moon, the governing

bodies of creation and rest. We were God's children.

LOSS

I CANNOT SEE PAST THE GLARE of street lamps, cannot find my way to the sacred. It's towards dusk, the moon three quarters full and waxing. Behind the trees on the ridgeline, the sky is pale yellow, and above that a washed-out gray-blue. Just when the world begins to shimmer with evening, all the lights come on. From my front porch in my quiet neighborhood of my mid-sized city, I can count sixty individual lights. Head lights blaze past, house lights flip on, and the flicker of TVs. An airplane blinks across Orion's belt, full of far distant suns that pale beyond the bulbous yellow streetlight. The red blink of a radio tower beams off the ridge.

Darkness cannot contain the light, and it becomes another kind of day. Only fifty-six percent of Americans live where it gets dark enough for plants and animal bodies to have their full physiological response to night. With our unbridled extraction of resources from the earth has come unbounded artificial light. Two-thirds of people in the United States and half of those in the European Union can no longer see the Milky Way with the naked eye. A very small portion of the world still receives the gifts of perfect darkness.

They say the lightning bugs are going away, that some children will never have the joy of catching them in a jar. When we lose our lightning bugs, we lose our magic—for what is more magical than the secret essence of a lightning bug? When we lose our magic, we lose our wonder and our connection to the divine, that which is beyond our understanding.



Laser aimed toward center of Milky Way, 2011

A MAP TO THE NEXT WORLD

THE FIRST STORIES OF SPIRIT were told at night. We looked beyond this world to another. We spun webs of stories between the stars, connected this world with the world above. We wove our stories from the fabric of night, and that fabric bound us together with purpose.

The night was a hole to fall into, a dream in which to escape, a door to the next world, hanging ajar. Cast out into the black sea of night, we traveled by its map. Our human minds alit on scattered dots of light; our inner brightness was awakened. We learned to read the map—its intricacies, the lines between the dots, the patterns and cycles of the shadowy orb of moon and the crystalline centers of suns. In this map was unfailing guidance; there was consistency in its changeability. With this map, there was no doubt we were on a sacred path.

CHEROKEE MYTH OF THE PLEIADES AND THE PINE

WHEN THE WORLD WAS NEW, seven young boys spent their time playing the

gatayú'stii game. They would roll a stone wheel on the ground and then chase after it with a curved stick to strike it. The boy's mothers rebuked them for spending all their time playing the game, but still the boys played. One day their mothers decided to collect the *gatayú'stii* stones and boil them in a pot for the boys' dinner. When the boys came home, their mothers ladled out the stones, saying, *Since you like the *gatayú'stii* stones better than working in the field, eat the stones for your dinner!*

The boys became very angry. They went to the townhouse and decided to go to a place where they would never see their mothers again. They began to dance a prayer around the townhouse. When their mothers came to look for them, they saw that the boys were dancing in a circle and that their feet were lifting off of the ground. With every round they went higher into the air.

The mothers ran to pull them down, but they were lifting high above the roof of the townhouse. One of the mothers grabbed a *gatayú'stii* pole and pulled her

boy down with it; when he hit the ground, he sank into the earth and was buried. The other boys rose high into the sky and became the Pleiades, or *Ani'tsutsā*.

The mother whose boy had sunk into the earth went every morning and evening after that to cry over him, until the ground was wet with her tears. One day a tiny tree sprouted out of the ground and began to grow, until it became the tree that we call the pine. The pine is of the same nature as the stars and holds within it the same bright light.

A MAP OF US

I'M LOOKING DOWN at Earth's city lights from a NASA satellite. It looks like a tangled network of synapses firing off continuously. Every land mass is illuminated, scattered with lights, even the tiny islands that dot the blue velvet seas. NASA biologist Marc Imhoff has been using images like these to map the urbanization of the planet. He says that light pollution is a "a global map of where human beings are." This is what we do. To destroy the night is human. This image is a map of human destruction, rampant industrialization. It is a map of the obliteration of darkness.

The United States is beaming its lights into space, a dense mass of electrical filament. For one hundred years we have strung electrical wires across our world, and it has changed everything. The country becomes city; forests become brightly lit parking lots; dirt roads become boulevards. Almost nowhere can you look to the horizon without seeing dozens of wires criss-crossing in the sky.

On this map, the US interstate highway system is a grid that connects

the brighter circles of metropolitan areas. It looks as if there's no darkness on the continent. It looks as if there's nothing but lights. Whoever is passing above, will they tell stories of our lights and draw lines between the dots, tell of how the earth is becoming full of stars? Ours are chaos, not like the perfect order of the cosmos. Ours have no pattern over time except growth. Perhaps this will be another map in time that someone, somewhere will learn to read.

NIGHT WORDS

HUSH. Still. Whisper. Quiet. Moon. Cover. Burrow. Den. Sleep. Dream. Slumber.

Loss

OUR MOTHERS AND FATHERS heard of a map but placed it in the past, their mothers and fathers saw the map but did not learn the key, and their mothers and fathers learned the key but forgot it. How can we retrace our steps back to night without a map? There are things that must be remembered, and things too that we must forget. Who is here to teach the map, to travel with us by night?

MODERN MYTH OF THE PLEIADES

I CANNOT SEE THE PLEIADES. What are the Pleiades?

OTHER MAPS

THE SEA TURTLE'S MAP is ingrained; breaking through its shell, it knows what to do. The moonlight reflecting off the ocean water draws the hatchling turtle towards it like a beacon. In the first



United States at night, NOAA image

hours of its life, miraculously, a turtle will make its slow way towards the water. Such are its sure beginnings. But now, brightly lit beach developments are changing the ancient path of hatchlings. Disoriented, confused by the bright lights of hotels, the sea turtle goes inland, towards the dunes, where it will not find the sustenance it needs, and where it is susceptible to predators. Six of the seven species of sea turtles are now listed as Endangered or Critically Endangered.

The maps of migrating birds are ingrained. Seasonally, they return to the same places thousands of miles from where they began. How do they know? One day, it is time, and they go. They travel familiar flyways and know the landmarks. The Arctic Tern takes a sea journey of over fourteen thousand miles, and the Bar-tailed Godwit travels almost seven thousand miles—from Alaska to New Zealand—without stopping.

The maps of migrating birds are also passed down. Research has shown that

younger birds are more likely to become lost on migrations (or go the opposite way) and that older birds know the distance to wintering grounds. Migrating birds use the sun, moon, memory, landmarks, magnetic fields, wind currents, olfactory clues, weather, and whatever is in their DNA to find their way. But all of these cues can be tossed to the wind when some birds become “captured” by artificial lighting as they migrate at night. They collide with brightly lit skyscrapers; they fly in circles around buildings until they fall out of the sky from exhaustion. They have not learned to navigate the human night sky. Around eleven percent of migratory birds are Globally Threatened.

THREE TYPES OF LIGHT POLLUTION

Glare

Glare is when light floods your field of vision directly from the source, such as a streetlamp. Contrast between objects is reduced, and extreme brightness and

shadows are created. This form of light pollution is blinding and disabling and does not allow you to differentiate between objects.

Spillover, or light trespass

Spillover is when light stretches beyond the intended area to be lit, such as when a home's floodlights spill over into the adjacent property or a streetlight floods into your bedroom window.

Skyglow

Skyglow is the bright (often pink or yellow) glow that fills the sky around urban areas. As artificial light scatters into the atmosphere, a lurid-looking sky blankets the stars.

All of these types of pollution are ameliorated by lights pointed downward and shielded, as well as by motion-sensor technology that employs lights only when they are needed. Poorly

aimed and unshielded outdoor lights waste more than seventeen billion kilowatt hours of energy in the United States each year.

DECLARATION IN DEFENCE OF THE NIGHT SKY AND THE RIGHT TO STARLIGHT

ON THE CANARY ISLANDS, off the West coast of Africa, one can see all the constellations in the Northern Hemisphere all year long. Here, they say the stars "smile down on you." In 2007, organizations from around the world gathered for the International Starlight Conference on the island of La Palma to enjoy the best stargazing in the world, and to pen the Declaration in Defence of the Night Sky and the Right to Starlight.

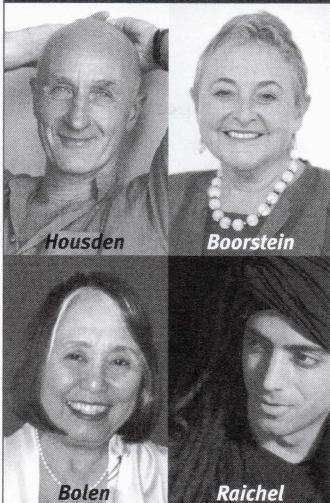
The Declaration states that "a view of the starlight has been and is an inspiration



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for all humankind, that its observation has represented an essential element in the development of all cultures and civilizations." It posits that the sky is "a common and universal heritage" and urges leaders, public institutions, and governments to adopt the ten principles of the Declaration, all of which seek "to protect and conserve the cultural and natural heritage of Starlight."

The first principle has broad implications. It states that "an unpolluted night sky that allows the enjoyment and contemplation of the firmament should be considered an inalienable right of humankind equivalent to all other environmental, social, and cultural rights." Principle Six says that governments need to "guarantee the common right to contemplate the firmament." If we established the night sky as a common good, a human right, we could easily adopt protection policies that would keep our levels of light pollution in check. The government of La Palma adopted the Declaration; on that island you are guaranteed the right to contemplate the firmament.

Photinus pyralis, common firefly or lightning bug



A MAP BACK

WE, ALL OF US, ARE HUSHED, still.

There are dozens of us humans, quieter than dozens of humans ever were. We have come to see *Photinus carolinus*, the only lightning bugs in the Americas that synchronize their flashing lights. With all of the artificial lights that are available to us, in all of their endless patterns on television and computer screens, tonight we have chosen *P. carolinus*. We have chosen the wonder of a minute insect whose bioluminescence we cannot explain.

We want only to pass it through our corneas, turn its lights upside down in the backs of our retinas, to let our hungry eyes hold a thousand glowing dots the size of the tip of a pen. In a Southern Appalachian valley in my home county, this is the mystery that *P. carolinus* paints upon the canvas of night. I feel a connection to this bioluminescent bug, as if we have come down through the ages to end up here together, all aglow. Luciferin, oxygen, and the enzyme luciferase light up the lanterns that light our wonder.

They are an ocean of lights, breaking in billowing waves over the hill, without sound. They ripple through trees like one fluid organism. We are holding our eyes wide for fear of blinking. Abruptly, there is darkness; we hold our breaths. And then again the waves break, the ripples of light radiate outwards and we are quietly gasping. We all become minuscule in the presence of these thousands of tiny insects, just as we become small under these stars. We become one dot looking to other dots on this large map of the universe; here, we are finding our way back. |